



Record record

The STS-58 crew brings back a photographic record of its record-setting flight. Photos on Page 3.



Doubly durable

JSC engineers say the space shuttle's space suit is now certified for use on space station. Story on Page 4.

Space News Roundup

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No. 45

Endeavor goes to different pad as crew trains

By Audrey Schwartz

Preparations for the upcoming Hubble Space Telescope servicing mission got moving, literally, for both the space shuttle *Endeavour* and the STS-61 crew last week.

Today is the earliest that *Endeavour* may move to Launch Pad 39B as a precaution after a fine sand-like substance, apparently the result of recent high winds at the Kennedy Space Center, was discovered in the Payload Changeout Room two weeks ago.

The pad change was not expected to delay the Dec. 1 launch target.

Shuttle managers will meet Wednesday to establish a firm launch date.

Endeavour was to remain at Pad 39A for routine processing, such as hypergolic propellant loading, until the other pad was ready.

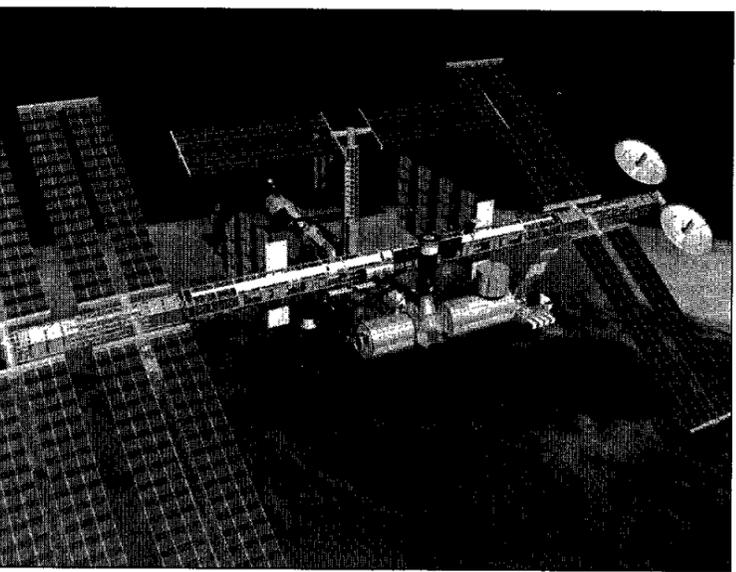
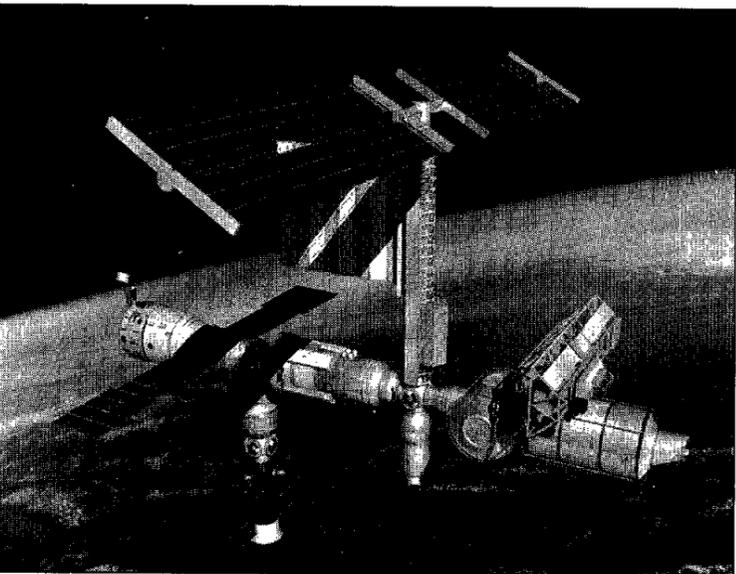
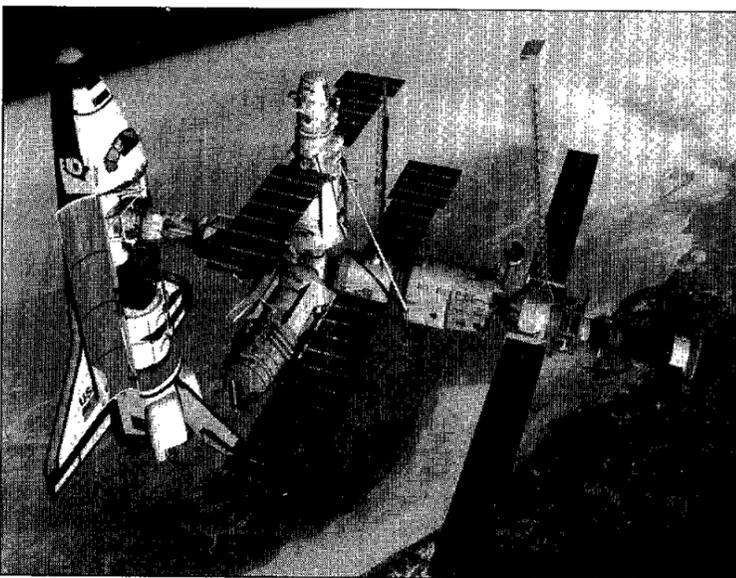
Mission managers ordered the move to ensure protection for the servicing instruments, which were protected by air-tight covers. Technicians cleaned the covers and inspected the instruments, which received a clean bill of health, before resealing them for transport to Pad 39B later today.

Managers decided that while the Pad 39A changeout room could be recertified in time, normal vehicle processing activities could interfere with the recertification requirements. Some standard post-launch work from STS-58 was in work last week on Pad 39B, including recertification of the payload changeout room. The ceiling in the Pad 39B changeout room was sealed during the recertification process to preserve its integrity.

Meanwhile, the STS-61 crew—Commander Dick Covey, Pilot Ken Bowersox and Mission Specialists Story Musgrave, Tom Akers, Jeff Hoffman, Kathy Thornton and Claude Nicollier—spent 60 hours last week practicing the tasks they will perform on the fourth and fifth space walks during the mission.

The crew worked in concert with the flight control team during a long-duration joint integrated simulation that began last Monday morning at simulated flight day six. Working in the Weightless Environment Training Facility, Thornton and Akers

Please see **COLUMBIA**, Page 4



Top: A space shuttle docks with the Russian Mir space station in Phase One of the new international space station. Middle: The international station reaches human-tended capability with U.S. and Russian elements in Phase Two. Bottom: The completed and operational international station sports elements from the U.S., Europe, Canada, Japan and Russia.

NASA Illustrations

U.S. considers Russian partner for space station

By Kelly Humphries

The White House is now considering a bold, new plan for a U.S.-led international space station that includes Russian participation, submitted last week by NASA and Russian Space Agency officials.

The "Alpha Station" plan would give Russia a partner status equal to that of the other international participants—Canada, Europe and Japan—and provide for faster construction of a more robust station with additional space and a larger initial crew size at a substantially lower cost.

The plan also would establish a unified command and control center, with the Mission Control Center at JSC as the prime site for the planning and execution of integrated system operations with exclusive command and control authority. An MCC in Kaliningrad would be linked with Mission Control in Houston, and provide backup operations support.

"This is it," NASA Administrator Daniel Goldin told reporters after the plan was announced Nov. 4 in conjunction with the Russian Space Agency's Yuri Koptev. "Give us approval, and we are going to build a space station."

Three goals are established in the plan: to provide unique and extensive scientific and research opportunities for humans in space; to jointly develop and construct an international space station with permanent human capability at an inclination of 51.6 degrees; and to produce a capable and cost-effective space station in a cooperative international effort.

The agreement would mean increased power capability over the redesigned U.S. space station and a crew of six or seven astronauts instead of the four accommodated in the redesign. It also would mean the Russians would shelve plans to assemble a second-generation Mir station.

The NASA/RSA study was an outgrowth of an agreement made in October 1992 to cooperate on a program combined astronaut-cosmonaut crew activities with the space shuttle and Soyuz spacecraft and the Mir space station, which will begin with the first launch of a Russian aboard an American spacecraft on STS-60 early next year. It was agreed to in a Joint Statement on Space Cooperation

Please see **U.S.**, Page 4

JSC sends space station name ideas to Washington

By Eileen Hawley

More than 100 JSC employees responded to the invitation to name the redesigned space station.

Suggestions were reviewed by a JSC panel chaired by Steve Nesbitt, chief of the Public Services Branch. The panel evaluated the suggestions against guidelines provided by the Space Station Transition Team and developed a list of 10 names, which it forwarded to NASA Headquarters on Oct. 25.

"In most cases, a name was suggested by more than one individual," says Nesbitt. "We reviewed suggestions with an eye toward its appropriateness and appeal." All of the employees submitting suggestions received a letter from Nesbitt acknowledging their participation in this campaign and informing them which names had been selected.

The names forwarded to Headquarters by the panel were: Adventure, Destiny, Frontier, Horizon, Millennium, Newton, Odyssey, Phoenix, Quest, and Unity.

More than 172 suggestions from field centers, the space station contractor team, and the general public were then reviewed by the Space Station Name Committee in Washington. A list of five names has now been forwarded to Headquarters' Public Affairs Office for review. The five finalists are Unity, Sigma, Alliance, Aurora and Alpha.

The Public Affairs Office will review the names and make recommendations to NASA Administrator Daniel Goldin for his consideration and subsequent submission to the White House. Most likely, President Clinton will give final approval for the redesigned station's name.

Center Operations needs help protecting walls

JSC wants you—to stop putting posters and fliers on walls with tape and thumbtacks.

The problem is an old one at this center, but has become even more costly in recent months with the occupation of Bldg. 4S, which has more expensive wall coverings that can't be repaired as easily as painted walls.

"People stick stuff on the walls and they don't think about what's going to happen when they take it down," said Keith McQuary, the head of Center Operations' Plant Engineering Division, which is charged with maintaining JSC buildings. "Tape tends to pull the paint off the wall and a push pin leaves a hole."

Whether of official or unofficial ori-

gin, all bulletins belong on bulletin boards instead of walls, said Center Operations Director Grady McCright. Taxpayers have made a significant investment in the facilities at JSC, and it is all employees' responsibility to properly care for those facilities.

Plant Engineering will remove improperly posted materials from interior walls to preserve surface coatings and wall coverings.

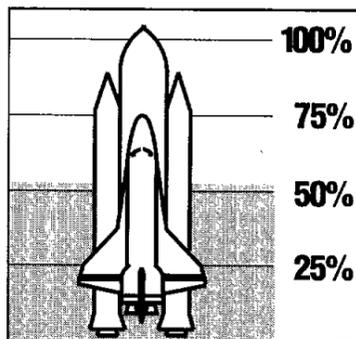
Organizations that need bulletin boards or other means of posting materials should submit a Facility Work Request (Form 930) to have one installed. Or, alternative methods of disseminating the information should be explored to minimize the amount of materials being posted.

Center Operations has established the following guidelines to

help deal with the problem:

- Tape should not be used for posting on painted surfaces.
- Thumbtacks, pushpins, staples or other pointed fastening devices on any surface that was not specifically designed for such fasteners.
- Notices should not be posted on the first floor of multi-storied buildings except on bulletin boards or easels. Easel postings should be approved by Center Operations Directorate Office. All other building postings should be approved by the Special Purpose Maintenance and Services Office, JJ14.
- Material should not be posted on walls, doors, in elevators or at facility entrances.

For more information, check JSC Management Directive 1590.2F.



1993 GOAL: \$440,000



Health Fair will kick off open season

JSC's Human Resources Office will host a one-day Health Fair from 9 a.m.-4 p.m. Nov. 22 as part of the 1993 Health Benefits Open Season.

The fair will be held in the Gilruth Center ballroom and health care representatives will be available to discuss changes and improvements to their 1994 benefit plans. Additionally, representatives of non-federal benefits plans for dental and vision care and financial planning participate in the fair.

Health plans for 1994 will continue to increase the numbers of doctors and facilities available through the preferred provider

Please see **HEALTH**, Page 4

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

Christmas dinner dance — Tickets for the Dec. 10 and Dec. 11 EAA Christmas dinner dances are on sale beginning Wednesday, Nov. 17 through Dec. 8. Cost is \$22.50 per person.

Entertainment '94 Coupon Books — Bay Area/Galveston/ Downtown or FM 1960/Downtown: \$30 each, \$1 off first book for civil servants. Gold C Books: \$8

Space Center Houston — Discount tickets: adult, \$7.50; child (3-11), \$4.50; commemorative, \$9.95.

Metro tickets — Passes, books and single tickets available.

Movie discounts — General Cinema, \$4.50; AMC Theater, \$3.75; Loew's Theater, \$4.

Upcoming events: Children's Christmas Party, New Year's Eve Dance.

Stamps: Book of 20, \$5.80.

JSC

Gilruth Center News

Sign up policy — All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

EAA badges — Dependents and spouses may apply for photo identification badges from 6:30-9 p.m. Monday-Friday. Dependents must be between 16 and 23 years old.

Weight safety — Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Nov. 16. Pre-registration is required. Cost is \$5.

Defensive driving — Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is Dec. 4. Cost is \$19.

Aerobics — High/low-impact class meets from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32 for eight weeks.

Exercise — Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24 for eight weeks.

Alkido — Martial arts class meets from 5-7:30 p.m. Tuesdays and 6:15-8:15 p.m. Wednesdays. Black Belt class from 6-8 p.m. Fridays, requires instructor permission. Cost is \$25 per month.

Fitness program — Health Related Fitness Program includes a medical examination screening and a 12-week individually prescribed exercise program. For more information, call Larry Weir at x30301.

JSC

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Oakbrook West, 4-2-2, completely updated, c'fans, mini blinds, FPL, lg yard w/many trees, priced to sell. x31846 or 486-5146.

Lease: Univ Green, 3-2-2 patio home, good cond, \$825/mo + dep. 486-8551.

Sale: Camino South, 3-2-2 (D), marble vanities, hi eff AC, corner FPL, new vinyl floors, new paint, landscaped, private courtyard, c'fans, \$79k. 532-3318.

Lease: Woodville, TX, lakefront 3-2-1, 1800 sq ft, FPL, SC/PR, pier, apl, 46 acre, WD/LT, \$550/mo + one mo dep, some restrictions. x49772 or 484-8030.

Sale: LC, waterfront marina TH, 2-2, \$99.5k. Steve Brody, 487-7138 or 532-3415.

Sale: Univ Trace TH, 2-2-5-2 comm poll. FPL, \$68.5k. Dave, x38161 or 486-5181.

Rent: Taos, NM, house handy to town and ski valley, 7th day free, sleeps 4. 532-2082.

Sale: LC, Bayou Brae, 4-2-2 colonial, new carpet/roof, detached all brick garage, lg lot, covered patio. 332-6325.

Rent: Breckenridge, CO ski house, sleeps 12, view of slopes, 1 block from ski shuttle. Larry, (303) 482-9124.

Sale: Friendswood, rustic country 3-2-2 on wooded 3.6 ac, pond, atrium, separate workshop, solar, satellite, never flooded, 2400 sq ft, \$158k. Jim, x39229 or 482-7873.

Rent: Galveston condo, furnished, sleeps 6, wknd/wkly/dly rates. Magdi Yassa, 333-4760 or 486-0788.

Sale/Lease: Nassau Bay, 4-2-2, recently remodeled, gas, \$114.5k/\$850. Minh, 333-6806 or 484-2456.

Rent: Southern CO, 2 BR, sleeps 5/6, no smoking/pets, Bob, x30825 or 998-7372.

Rent: Arkansas cottage on Blue Mountain Lake, furn, wooded, 4 acres, screened porch, \$250/wk, \$50/day. x33005 or 334-7531.

Sale: LC, Meadowbend, 4-2-2, FPL, c'fans, new landscape/paint, \$69.9k nego, assum. Peter, 526-1853.

Sale: LC Countryside South, 3-2-5-2A 2 story contempo, new paint/carpet/c'fans/custom window shades, ceramic tiled kitchen, corner lot w/lg yard, \$81.5k. x38413 or 554-2728.

Cars & Trucks

'90 Ford Ranger PU, red, 4 cyl, 5 spd, AC, AM/FM, 45k mi, 100k mi warr, \$5.5k OBO. 534-4667.

'90 Plymouth Grand Voyager LE, white w/wood trim, AM/FM/cass, ex cond, 43k mi, \$12.5k. Pat, x31105 or 480-7924.

'87 Hyundai Excel, 5 spd, 4 dr, AC, tinted windows, AM/FM/cass, non smoker, garaged, new battery, well maintained, ex cond, 59k

mi, \$2.9k. x33662 or 334-6794.

'82 GMC S-15, 4 spd, 1.9L AC, does not run, timing chain broken, \$400. 554-6533.

'79 Olds 88, very well used, \$600. 554-6533.

'87 Nissan Pulsar, red w/grey and blk int, new tires, ex cond, well maintained. 333-6277 or 339-3562.

'86 Firebird, V8, 305, midnight blue, gray velour int, new trans w/warranty, tires good cond. Nelda, 333-7686.

'92 Dodge Dakota, ext cab, V6, low mi, AM/FM/cass, \$11.7k. T. Morgan, 335-6167 or 326-1482.

'85 Mustang convertible, lo mi, 3.8L V6, full pwr, ex cond, consider trade for PU or 4WD vehicle. x30017.

'89 Ford Aerostar minivan, Eddie Bauer, all pwr, digital pkg, dual AC, ex cond, \$9,995. 980-7481.

'92 Geo Prizm, 4 dr, auto, P/S, AM/FM, 1.6L 16V eng, ex cond. Tom, 326-1217.

'87 Mitsubishi Cordia Turbo, 5 spd, AM/FM/cass, silver, blk int, good cond, \$2,992 OBO. Jan, x33434 or 333-5266.

'54 Chevy PU, restored, \$5k. 282-3479.

'78 Porsche 928, brown w/leather int, auto, ex cond, 75k mi, \$8.5k. Bill, x48889.

Boats & Planes

Pietenpol Air Camper, open ckpt, tandem seating, \$9.5k. 214-241-7184.

Laser sailboat, 13'-11" LOA, 76 sq ft sail, centerboard, no trlr, BO. Jerry, x35226 or 333-2778.

'66 15' Lamar fiberglass boat w/50hp '73 Evinrude and Shoreline trlr, \$450 as is. 488-4463.

'90 VIP 18', I/O, 130hp OMC, under 100 hrs, ex cond, garaged, \$7.6k OBO. x31737 or 575-1705.

224 Chaparral, V-bunk cuddly cabin w/ head, 200hp Johnson w/SS prop, electronics, drive-on Sportsman trlr w/new brakes and 6-ply tires, everything in ex cond. Jim, 929-7358 or 286-9632.

Windsurfing equipment, 5 sailboards, many UP sails, 7.0-3.6, other equipment. Arlene, x37105 or 488-6156.

'90 Hunter 30' auxiliary sloop, AC, roller furling, full batten main, digital knot/depth/wind, autopilot, Bimini, ex cond, \$52.5k. 980-7481.

18' Sol-Cat catamaran and trlr, ex cond, \$1200. Mr. Bird, 923-3410 or 941-2968.

'74 14' Malibu boat w/'89 Nissan O/B, Johnson trolling motor, live well, galv trlr, Humminbird LCR, equipped for fish and ski. \$1,500. 482-7922.

Audiovisual & Computers

Macintosh 9 pin printer, \$75; IBM 9 pin printer, Daisy wheel, \$75 ea; 84 kybd, \$25; 101 kybd, \$40; CGA monitor, \$30; EGA monitor, \$50; VGA monitor, \$75. Pepper, 339-1320.

IBM clone computer, 8088 PC-XT, 40 MB HD, 640k mem, color graphics card, printer, \$275 OBO, will teach, help upgrade and find monitor. John, 212-1392 or 538-3320.

286, 16 MHz, 40MB HD, 1MB RAM, 5.25 and 3.5 floppy, EGA color monitor, 9 pin print-

Today

AIAA meets — The Engineering Management Technical Committee of the American Institute of Aeronautics and Astronautics is sponsoring a lunch and learn meeting from noon-1 p.m. Nov. 15 in the Bldg. 3 cafeteria, small dining room. Dr. John Hunsucker of the Cullen College of Engineering, University of Houston, will discuss the foundations of integrated risk management. For more information, contact John Hunsucker, 749-4194 or Susan Voss, x34841.

AIAA meets — The Houston section of the American Institute of Aeronautics and Astronautics meets at 7:30 p.m. Nov. 15 at the Gilruth Center. Texas A&M Zachary Professor of Engineering Aaron Cohen will speak on "An Outlook for the Space Program." For additional information, contact Frankie Hap, 333-6064; Ardell Broussard, 283-1040; Mary Ann Bivona, x31350; or Sara Heggio, 282-3160.

Cafeteria menu — Special: Italian cutlet. Total Health: herb flavored steamed pollock. Entrees: barbecue beef, spare ribs with kraut, steamed pollock, French dip sandwich. Soup: black bean and rice. Vegetables: California mix, okra and tomatoes, vegetable sticks, ranch style beans.

Tuesday

Cafeteria menu — Special: corned beef hash. Total Health: baked potato. Entrees: meatballs and spaghetti, grilled liver and onions, beef cannelloni, ham steak Hawaiian. Soup: split pea. Vegetables: winter blend mix, seasoned cabbage, breaded squash, lima beans.

Wednesday

NCMA conference — The Space

Dates & Data

City-Houston Chapter of the National Contract Management Association will present its fall educational conference Nov. 17-18 at the South Shore Harbour Resort and Conference Center. For more information, call Carolyn Moe at x34158.

PSI meets — The Clear Lake/NASA area chapter of Professional Secretaries International will meet at 5:30 p.m. Nov. 17 at the Holiday Inn on NASA Road 1. For more information, contact Elaine Kemp, x30556.

Astronomy seminar — The JSC Astronomy Seminar will meet at noon Nov. 17 in Bldg. 31, Rm. 129. Dr. Tomasz Stepinski of LPI will discuss the evolution of protoplanetary disks. For more information, call Al Jackson, 333-7679.

AIAA meets — The American Institute of Aeronautics and Astronautics will meet at 11:30 a.m. Nov. 17 at Lockheed Plaza 1 atrium. A. R. Shamaler will discuss "Leak Before Burst Design for Pressurized Components." For additional information, contact Gillian Parker, 333-6239.

Russian speakers — Practice Russian language skills from 11 a.m.-1 p.m. Nov. 17 in the Bldg. 3 cafeteria. For more information, call Jack Bacon, x38725 or Amy Mendez, x38066.

Cafeteria menu — Special: smoked barbecue link. Total Health: roast pork loin. Entrees: cheese enchiladas, roast pork and dressing, baked scrod, baked chicken, Reuben sandwich. Soup: seafood gumbo. Vegetables: Italian green beans, Spanish rice, turnip greens, peas and carrots.

Thursday

Stress seminar — The Employee Assistance Program will present a

lunch seminar at 11:30 a.m. Nov. 18 in the Bldg. 3 cafeteria, small dining room. Dr. Melinda Lea will discuss techniques for dealing with the stress of the upcoming holidays. For additional information, contact the EAP office, x36130.

IEEE meets — The Galveston Bay section of the Institute of Electrical and Electronics Engineers will meet at 11:30 a.m. Nov. 18 at the Gilruth Center. Dr. Mitch Eggers will speak on Genosensors—Microelectronic for Medicine. For additional information, call Barbara Nepveux, x30194.

Russian speakers — Practice Russian language skills from 11 a.m.-1 p.m. Nov. 18 in Bldg. 3 cafeteria. For more information, contact Jack Bacon, x38725 or Amy Mendez, x38066.

Cafeteria menu — Special: chicken fried steak. Total Health: roast beef with gravy. Entrees: roast beef with dressing, steamed pollock, lasagna with meat, baked chicken, French dip sandwich. Soup: beef and barley. Vegetables: whole green beans, butter squash, cut corn, black-eyed peas.

Friday

Cafeteria menu — Special: fried chicken. Total Health: vegetable lasagna. Entrees: broiled cod fish, beef stroganoff, vegetable lasagna. Vegetables: steamed broccoli, carrots vichy, Italian zucchini, breaded okra.

Monday

Cafeteria menu — Special: meat sauce and spaghetti. Total Health: potato baked chicken breast. Entrees: franks and sauerkraut, sweet and sour pork chop with fried rice, potato baked chicken. Soup: cream of potato. Vegetables: French beans, buttered squash, lima beans.

er, \$450 OBO. Pepper, 339-1320.

Audiovox 7 band, in dash, 40 watt graphic equalizer/amplifier, 50-20k hz response, 5 segment LED, fader control, new, \$45. x30919 or 771-0955.

Macintosh Classic, 4MB RAM, 80MB HD, ex cond, \$600; Micronet 45MB portable Mac HD, carry case and cables, \$140. Keith, 282-3666 or 332-6751.

Amiga 500 computer, 1 MB RAM, 3 MB expansion, 1084 color monitor, external 3.5 FD, 2 joysticks, 1 mouse, books, SW, ex cond, \$350. x30210 or 333-9242.

JVC Camcorder, VHS-C, hard case, all accessories, cables etc, \$400. 488-8126.

Yamaha CD player, single disc home player, \$45 OBO. Eric, x39055 or 334-4770.

Denon DRA-35V audio/video receiver-tuner, superior quality, ex cond, \$175. Don, 282-6811.

Kenwood stereo rcvr, KR-A5020, 60 watts per channel, 2 A/V inputs, auto play, synchro recording, remote control, tape deck, CD, Phono connections, 3 AC outlets, 4 speaker connections, manual, \$100. Omar, 282-4978.

Photographic

Video transfer box for transferring slides and movies to videotape, 6 mo old, used once, \$38. x37954 or 481-1605.

Pets & Livestock

Young cats, 1 male, 1 female, neutered, shots. Jay, x38800 or 333-5869.

Blk quarter horse, registered, 3 yr old, Louisiana bred, rein broken, some racing experience, all papers avail. Mark, 487-1535.

Boxer/Chow mix puppies, 12 wks old. Laurie, x35590 or 991-0821.

Musical Instruments

Gibraltar rock mount 5 piece drum practice pad kit, new, was \$225, now \$150. Steve, 992-1907.

Lost & Found

Raleigh 6 spd bike missing from Mission Control Center feared stolen. Jon Axford, x37671.

Household

Elec dryer, \$95; antique vanity, \$75; desks, \$30 ea; sm round dinette table, \$25; 2 tier round end table, \$18; pool table, \$25 OBO; printer tables, \$15 ea. 488-6521.

Solid pecan BR suite by Dixie, qn mattress/hdbd, 2 end tables, triple dresser w/mirror, \$1k. Karen, 282-4141.

Sectional sofa, 2 pieces, rust color, \$150; rattan coffee table and end table w/smoked beveled glass insets, \$60 ea. Karen, 282-4141.

GE elec dryer, used, good cond, \$75 OBO. 332-2293.

Computer desk w/hutch, corner piece, printer stand and chair, ex cond, \$225. x34221 or 338-1248.

Wanted

Want to rent video of original "Death of a Salesman" with Fredrick March. Robin, 332-9009.

Want roommate to share LC 3-2-5-2, 2 living areas, lg kitchen, alarm sys, \$350 + 1/2 util. 282-2517 or 332-4290.

Want 2 roommates to share 3 BR house, \$300/mo, util split equally. 996-1455 or 332-2820.

Want inexpensive car or truck, '79 to current, mechanical work OK. 339-2869.

Want inexpensive travel trlr. 919-1263.

Want natural gas or propane grill. Rusty, x35589 or 474-9140.

Want car pooler from NW/Bear Creek/Katy area to JSC/CL area, hours 7 am to 4 pm. Raquel, x31810.

Want to buy twin sz rollaway bed. Bob, x30825 or 998-7372.

Want van pool riders from Sugar Land, West Wood Park & Ride to JSC area. Alice, x35234.

Want used Kenmore washing machine parts or machines not working, also need elec dryers, can pick up. Jim, x38624 or 475-9671.

Want non smoker to rent room in CLC, reduced rent in exchange for help with small child; want twin sz bookcase hdbd. 480-3424.

Want riders for vanpool, West Loop Park & Ride to JSC. Richard Heetderks, x37557.

Want part time kitchen help at Gilruth Center, waitress, dishwasher positions, evening shift, 4:00 pm to 9:30 pm. Pat, x30326.

Miscellaneous

Kg sz waterbed w/bookcase hdbd and semimotionless mattress, \$100; 14 kt nugget ring, \$100; 14 kt w/diamond chips cluster ring, \$100; 14 kt gold band, \$50. Marilyn, x36280.

Windmill palm trees, three at \$25 ea; 4 ft cabinet for garage workbench, \$35. Rusty, x35589 or 474-9140.

Formal dresses, 2 peach tea length w/ matching shoes; 1 lt blue sequin specially made w/matching purse and shoes; 1 floor length red w/matching shoes, 1 purple and silver striped floor length, dress sz 8-10, shoe sz 7. Trish, 992-1907.

Pinseeker metal wood set, 1, 3, 5 w/TTLite shafts and Golf Pride cord grips, \$40. 282-4557.

Remote control racing car, Panda, controller, batteries, 15 minute battery charger, extra tires/parts, \$100. Luke, 668-9770.

Ward's exercise bicycle, \$35. Dorothy, 482-1505.

Wedding dress, sz 6, w/slip and veil, sweetheart neck, beaded, elegant, short sleeve, very long train, \$425. x37124 or 532-2370.

Stair stepper w/upper body workout, was \$350, now \$150. 992-3876.

Lady's diamond wedding set, 1/4 kt engagement band w/ 1/4 kt custom wedding band, \$750 OBO. Bruce, x36702.

Springfield .20 ga shotgun, pump action, \$150 OBO. Bruce, x36702.

Soloflex, \$300. x32137.

Disney baby items, very clean bumper pad, comforter, flannel blanket, crib sheet dust ruffle, lamp w/shade, Mickey Mouse crib rail toy, \$65 for all; Century walker, very clean, \$20; Century Kang-A-Rock-A-Roo, \$8. all items ex cond. 992-5031.

Ben Franklin fire place, heavy duty, \$100; 1 lg skateboard, \$20. x39491.

Stair step exerciser, ex cond, computerized workout, \$50. R. Jones, x33750.

VCR, \$10; metal detector, \$50; oil fountain lamp, \$10; slalom ski, \$15; 2 lg table lamps, \$20 ea; chest of drawers, \$30; stereo equalizer, \$15; kg sz waterbed, \$80. x35092 or 944-2391.

Hamilton L type drawing board w/adjustable top, Vemco V track drafting machine, light and chair, \$950 for all. Frank, 474-4611.

Pants presser, \$18; recliner, \$85; Sears riding mower, 36" cut, 10hp, good cond, \$375; arched chrome shelf, \$75; armless sofa bed, mauve, full sz, \$150; boat trlr w/15' fiberglass v-hull boat and 55hp motor. 334-2335.

Bimini top for CJ7; 4 lots at Rosewood Cemetery in Humble, TX; love seat, brown velour print. x47920 or 941-3262.

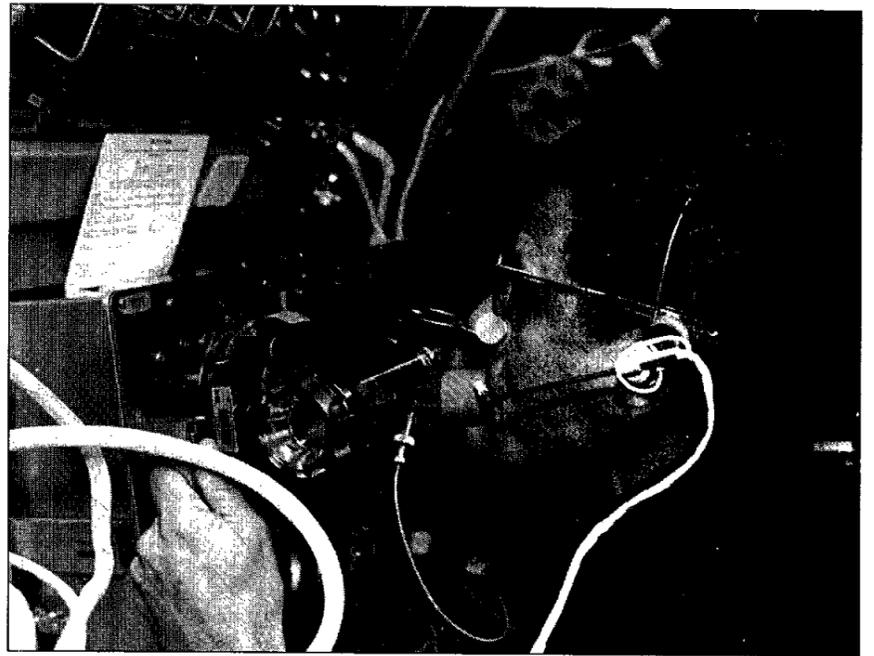
X-lg motorcycle helmet, \$85; type 2 life vests, adult and child, \$5 ea; pewter set, pitcher, milk cup, sugar cup, 2 mugs, 2 goblets, \$25; copper hot tea set, glass tea jar w/trim, holder, serving tray, 2 cups, \$20. 919-1263.

Two Canon NP400 copiers, both work, lg heavy duty, \$375 for both. 339-2869.

Lt weight aluminum crutches, fit 5'11" to 5'9", \$18. x35258.

Wedding dresses, one sz 6 w/veil and petticoat, \$350; one sz 10 w/veil, \$350. 998-0407 or 338-6645.

Power Trac 2000 treadmill, made in USA, new, \$150; lady's suede coat, sz 12, tan color, ex cond, \$50. 333-2335.



Spacelab Life Sciences 2

STS-58 mission studies effects of microgravity on the human body during record-setting flight

It's been almost a month since *Columbia* landed at the Dryden Flight Research Facility ending its Spacelab Life Sciences-2 mission and returning to Earth with record amounts of medical and scientific data accumulated during the 14-day mission.

The crew—Commander John Blaha, Pilot Rick Searfoss, Payload Commander Rhea Seddon, Mission Specialists Bill McArthur, Shannon Lucid and Dave Wolf, and Payload Specialist Marty Fettman—will share its thoughts on their successful mission in a briefing to employees Friday.

The briefing for all JSC employees begins at 11 a.m. Friday in Teague Auditorium. Crew members will show a film of mission highlights and their personal selection of photographs documenting their activities on orbit. Immediately prior to this briefing, the crew members will be presented with their Spaceflight Medals in recognition of their

contributions to the United States space program.

A second crew briefing is scheduled for 11 a.m. Nov. 22 at Space Center Houston. Employees will be admitted to Space Center Houston by showing their JSC badges at the entry turnstiles.

From left to right, top to bottom.

1) The crew poses for their on-orbit photograph. Clockwise from the roll of masking tape in the upper right corner are: Payload Specialist Marty Fettman, Mission Specialist Dave Wolf, Pilot Rick Searfoss, Commander John Blaha, Payload Commander Rhea Seddon, and Mission Specialists Shannon Lucid and Bill McArthur.

2) McArthur participates in a pulmonary system experiment designed to measure the movement of blood and gas on orbit.

3) Blaha and Lucid laugh as they acknowledge her newfound status as "goddess of the universe." Lucid had just established a new record for

the number of hours spent on orbit by any female astronaut. At mission termination Lucid also earned the distinction of being the most flown shuttle astronaut, male or female.

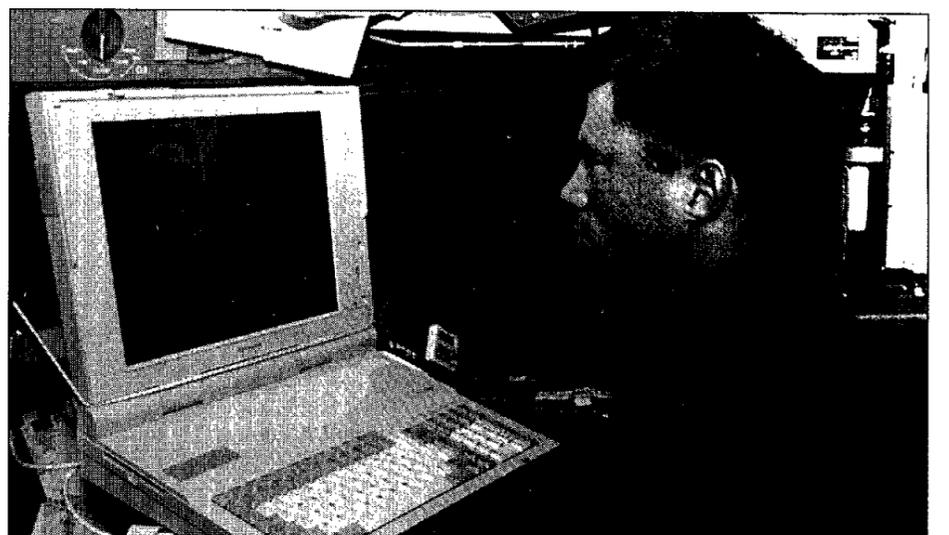
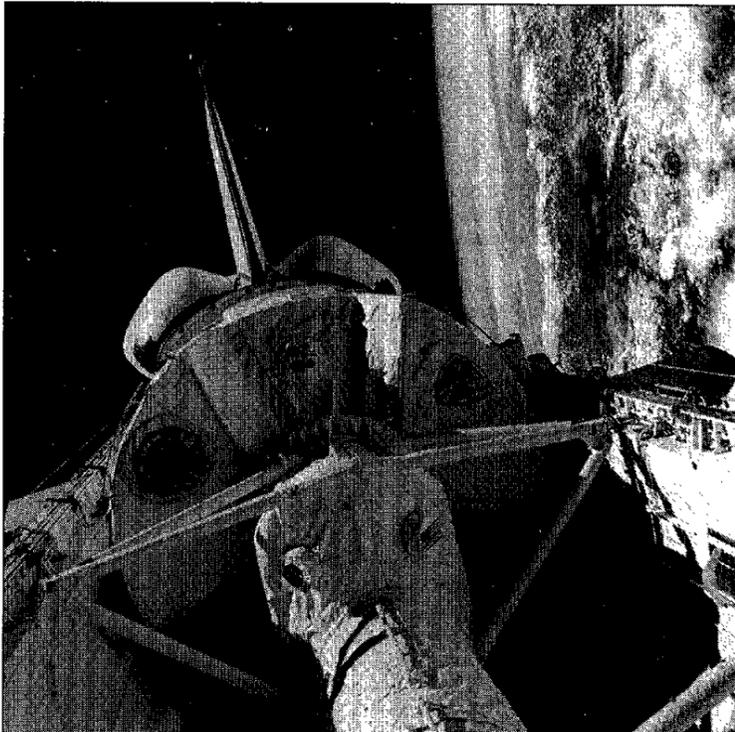
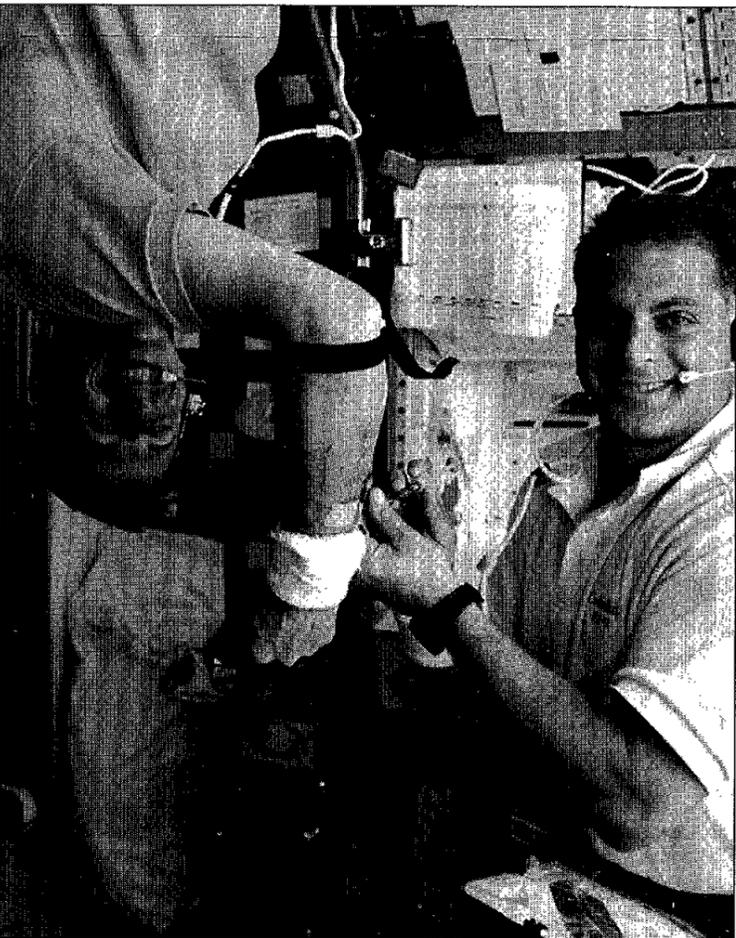
4) Wolf takes a blood specimen from Fettman as part of experiments to measure the effects of microgravity on the human body.

5) The orbiter passes over the Peru-Bolivia border and portions of the Amazon Basin. The Spacelab module and connecting tunnel can be seen in the payload cargo bay.

6) McArthur talks with Earth-bound students from the flight deck of *Columbia* using the Shuttle Amateur Radio Experiment.

7) Inside the Spacelab module, test subject Fettman sits in the rotating chair as Seddon spins the chair and prepares to measure Fettman's responses.

8) Searfoss practices with the Portable Inflight Landing Operations Trainer on the flight deck of *Columbia*. □



U.S. would lead international station effort

(Continued from Page 1)

issued by Vice President Gore and Premier Chernomyrdin on Sept. 2.

Phase One of the plan would expand the cooperative missions with up to 10 additional shuttle flights to Mir and four or more U.S. astronaut flights aboard Mir for a total stay time of about 24 months through 1997. During this phase, Mir's capabilities would be added to, with a shuttle bringing new solar arrays to replace those on Mir and Russia adding Spektr and Priroda science modules that will be equipped with U.S. and Russian instruments.

The heads of the Canadian Space Agency, the European Space Agency, the National Space Development Agency of Japan and NASA, together with the head of

RSA, met for the first time in Montreal on Nov. 7 to review the joint NASA/RSA studies.

They noted that Phase One, involving the shuttle and the Mir station, with its science, technology and operations activities, offers an early opportunity for learning and experience and could greatly reduce the risks for all of the partners during the combined Phase Two and Three activities to construct, operate and utilize the international space station. CSA, ESA, NASDA and NASA also agreed on the need to complete an intense process at all levels that could lead to Russia becoming a full partner in the international space station.

Phase Two would combine U.S. and Russian hardware to create a totally new, advanced orbital

research facility with human-tended capability by late 1997, developing the systems, support and infrastructure and exploring ways to reduce programmatic risks and increase scientific return. It involves 11 assembly flights, six using Russian launch vehicles and five using the space shuttle.

Phase Three would complete construction of the station by 2001 and support a permanent human presence with full operational and research capability for about 10 years. It would involve another 20 assembly flights, 14 using the shuttle and six using Russian launch vehicles.

The plan proposes a final configuration of station elements, but additional technical documentation and analysis could bring about

some smaller changes.

In total, the U.S. would supply one laboratory module and one habitation module, six truss elements, three photovoltaic arrays, two nodes, one pressurized mating adapter, one cupola and one unpressurized logistics carrier. Russia would supply one service module, one docking module, three research modules, two truss elements and one propellant element. U.S.-Russian jointly developed components would include an airlock, an energy block, a Soyuz TM-based assured crew return vehicle, a battery truss, a solar-dynamic power generator and a truss for photovoltaic arrays. Canada would supply a mobile servicing system, ESA an attached pressurized module and Japan an experiment module and

an exposed facility. In addition, Italy would supply a mini-pressurized logistics module under a separate pact with the U.S.

The international station would use almost all of the components being provided by U.S. industry for the redesigned space station, and the Russian hardware that would be procured does not substitute for U.S. components. The addition of Russian participation is expected to forge closer ties between U.S. and Russian aerospace firms, improving U.S. competitiveness and opening new markets for U.S. products in Russia.

The U.S. would be responsible for applying its established safety and reliability standards and will decide when the entire space station is ready for flight.

Thrift Savings open season begins today

Open season for the Thrift Savings Plan begins today, so it's time for employees to start thinking about whether they need to make any changes to their contributions.

Until Jan. 31, eligible employees may begin contributing, change their contribution amounts, change the allocation of their contributions among the available investment funds, end contributions or waive enrollment.

The effective date for changes depends on when the election form is received by benefits specialists. If the form is received by Jan. 8, changes are effective Jan. 9. Changes received between Jan. 9 and 22 will start Jan. 23. Changes received between Jan. 23 and 31, will go into effect Feb. 6.

A plan summary and TSP-1 election form may be obtained from the Employee Services Section, AH76, Bldg. 45, Rm. 140, which is where completed forms should be sent. For more information, call x32681.

Columbia arrives back in Florida

(Continued from Page 1)

successfully installed the Hubble Space Telescope's Corrective Optics Space Telescope Axial Replacement instruments and removed the high speed photometer. The next day, Musgrave and Hoffman practiced installing the Solar Array Drive Electronics. The simulation concluded early Wednesday evening.

While the STS-61 crew practiced for its upcoming flight, the astronauts from the two-week Spacelab Life Sciences 2 mission participated in post-flight medical checks. *Columbia* returned to KSC atop its Shuttle Carrier Aircraft last Monday, after a weekend cross-country trip. *Columbia* was demated from its 747 carrier and moved to Bay 2 in the Orbiter Processing Facility where it will be readied for STS-62 in the spring.

Technicians also continued to make progress on *Discovery*, which is being readied in OPF Bay 3 for the STS-60 mission, featuring the first shuttle flight of a Russian astronaut.



JSC Photo by Jack Jacob

NASA engineer Joey Marmolejo suits up for the 25th consecutive simulated space walk for the space shuttle space suit with the help of ILC suit technicians Jack Coverdale, left, and Ron Thibodeau.

Suited for space station

After 25 consecutive vacuum chamber test runs totaling 158 hours, the folks in Engineering's EVA Branch say the space shuttle space suit is certified for use on space station.

"The unit went through it with flying colors," said Glenn Lutz, subsystem manager for the extravehicular mobility unit. "We're ready to say that we're ready to use this EMU on space station."

The final run of the test sequence took place Nov. 4 in the Bldg. 32 Space Environment Simulation Laboratory and the Bldg. 7 Crew Systems Laboratory chambers, and was the culmination of testing that began more than three years ago.

When the EMU was first tested for flight, it was certified to perform three space walks before needing a complete checkout, Lutz explained. But with space station ahead, engineers wanted

to make sure the shuttle suits could stand up to an expected 12 space walks between cleanings.

First, the engineers put the suit's heart—its life support systems—through the equivalent of 50 space walks. Then, to be sure they were accounting for the human element, they put the suit and the life support systems through 25 space walks using eight test subjects, making sure that a checkout cycle could be skipped if something got in the way of a shuttle resupply flight.

Most of the 25 runs last six hours, but four were extended to eight hours. Three of the runs, at the beginning, middle and end of the sequence, put the suit through the thermal conditions that can be expected in space.

Hamilton Standard of Windsor Locks, Conn., manufactures the life support backpack and is prime contractor. ILC Inc. of Dover, Del., makes the suits.

Stress tips help holiday 'humbugs'

By Audrey Schwartz

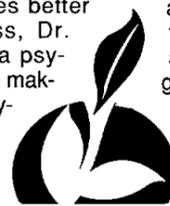
The holiday season can be the best of times—and, too often, the worst of times—for families and individuals because of the stress involved.

To help JSC employees better deal with holiday stress, Dr. Melinda Lea, a Bay Area psychologist, will share tips on making the holidays a more joyous and less stressful occasion at a special lunch-and-learn seminar at 11:30 a.m. Thursday in the Bldg. 3 cafeteria.

The "Holiday Stressors" discussion is sponsored by the JSC Employee Assistance Program, a part of the JSC Total Health Program.

"All the good things associated with the holidays can create stress, too," Connie Alexander, EAP administrator, said. "Families want holiday gatherings to be perfect, expect everyone to get along beautifully and outdo the last year's performance. Those expectations are rarely met. People feel obligated to be nicer even though they are more hassled than normal with parties, visitors, gift buying, decorating, extra cooking and cleaning. That can turn what is expected to be happy holidays into a miserable season."

The "Holiday Stressors" seminar is free and open to all employees and contractors. For more information, contact the Employee Assistance Program at x36130.



total health

JSC employees, contractors earn flight awareness awards

Seventeen JSC employees, accompanied by 17 contractor employees, witnessed the Sept. 12 launch of *Discovery* on STS-51 from Kennedy Space Center.

The 34 employees and contractors were honored as part of NASA's Manned Flight Awareness Program that recognizes commitment to mission success and flight safety through quality performance.

Civil service honorees were Carla Bell, New Initiatives; Leroy Bessix and Carlos Fontanot, Center Operations; Martin Coleman, Space and Life Sciences; Donna Fender, Paul Shack and Karl Zimmer, Engineering; Carl Koontz, Flight Crew Operations; Mike Manering and Michael Root, Mission Operations; Russ Morton, Space Shuttle Program; Barbara Nehr, Office of the Comptroller; Pat Pilola, Safety, Reliability & Quality Assurance;

Greg Smith, Administration; Fran Smith, Orbiter and GFE Projects; Bettye Solcher, Space Station Projects; and Betty Ann Wallis, Office of the Director.

JSC contractor honorees were Ernie Abadejos, Boeing; Larry Adkins, IBM; Peggy Askew and Mike Hazen, CAE-Link;

Norman Boettcher, Webb, Murray & Assoc.; Hal Chase and Rich Doty, McDonnell Douglas; George Durney, ILC-Dover; Cecil Henderson, Mason & Hanger;

Joan Hickman, KRUG; Wayne McCandless, Lockheed; Peggy Nelson, Hernandez; Lloyd Patty, Northrop; Rhonda Rodriguez, Grumman; Freda Shaunfield, RMS Photographic Services; Jim Squires, Kinetic Visuals; and Billy Webb, Lockheed White Sands.

The Honoree Award is the highest form of employee recognition in the MFA program.



Health Fair kicks off open season

New insurance options available for JSC employees

(Continued from Page 1)

networks. Improved benefits in the areas of preventive screenings for cancer, physical exams, prenatal care, well child care, and mental health and substance abuse are an additional feature of the 1994 plans. A new health maintenance organization, PacifiCare, joins the FEHB program for 1994 providing services to employees living in Fort Bend and Harris Counties and portions of Montgomery Counties.

Open season continues through Dec. 13. During this period, employees may change from one health plan to another, move from self only to family enrollment, or make a combination of changes. In addition, eligible employees who previously declined health benefit coverage may enroll. Changes and enrollments become effective Jan. 9. While premiums for some plans have increased, others have decreased resulting in an overall

average increase of 3 percent.

Those who do not wish to make changes do not need to take any action during open season. Employees planning to retire before the effective date who want to make a change should contact a retirement counselor as soon as possible.

For additional information on the benefits plans or the Health Fair, contact Employee Services, x32681.

Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Monday by the Public Affairs Office for all space center employees.

Dates and Data submissions are due Wednesdays, eight working days before the desired date of publication.

Swap Shop ads are due Fridays, two weeks before the desired date of publication.

Editor Kelly Humphries
Associate Editor Kari Fluegel

Dinner dance heralds holiday party season

Celebrate the holiday season at the annual EAA Christmas Dinner Dances from 7 p.m.-midnight Dec. 10 and 11 at the Gilruth Center.

Two festive dinner dances are scheduled so holiday revelers may choose the most convenient evening for their celebration. Social hour begins at 7 p.m., followed by a prime rib dinner at 8 p.m.

Guests will hear a variety of music from jazz to country-western by the Houston Society Jazz Orchestra in the ballroom, and by Winchester in the main gym.

Tickets go on sale Wednesday through Dec. 8 for \$22.50 per person. JSC employees, retirees and NASA-badged contractors may purchase single tickets or one table of either 6, 8 or 12 seats. For details, call Mike Gaudiano, x38318.